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EXAMINER
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FELTON, AILEEN BAKER

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PAPER

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* SEAN P. BURNS, LARRY A. MOQUIN,  
and PARESH S. KHANDHADIA

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Appeal 2008-3465  
Application 09/638,606  
Technology Center 1700

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Decided: August 14, 2008

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Before CHARLES F. WARREN, THOMAS A. WALTZ, and  
JEFFREY T. SMITH, *Administrative Patent Judges*.

SMITH, *Administrative Patent Judge*.

DECISION ON APPEAL

Statement of the Case

This is an appeal under 35 U.S.C. § 134 from a final rejection of claims 21, 23, 25, 27, 29, 31, and 34-47. We have jurisdiction under 35 U.S.C. § 6.<sup>1</sup>

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<sup>1</sup> An Oral Hearing for this appeal was held on July 8, 2008.

Independent claim 21 appears below:

21. A vehicle occupant restraint system comprising:  
an inflatable air bag;  
a gas generator for inflating said air bag;  
a nitrogen-containing gas generant composition within said gas generator that forms nitrogen oxide and/or nitrogen dioxide upon combustion thereof; and  
a selective non-catalytic reducing compound placed within said gas generator in heterogeneous relation to said gas generant composition, wherein said selective non-catalytic reducing compound is selected from the group consisting of ammonium salts and amine containing compounds,  
wherein at least one mol of the selective non-catalytic reducing compound is added per one mol of nitrogen oxide or nitrogen dioxide produced upon combustion of said gas generant composition.

Appellants' invention relates to a vehicle occupant restraint system comprising an inflatable air bag, a gas generator for inflating the air bag; a nitrogen-containing gas generant composition within the gas generator that forms nitrogen oxide or dioxide upon combustion and a selective noncatalytic reducing compound (SNCR), e.g., ammonium salt, placed in heterogeneous relation to the gas generant composition, wherein at least one mol of SNCR is added per mol of nitrogen oxide or nitrogen dioxide produced upon combustion of the gas generant composition.

The Examiner relies on the following references in rejecting the appealed subject matter:

Pacanowsky	US 3,993,514	Nov. 23, 1976
Poole	US 5,139,588	Aug. 18, 1992

The Examiner finally rejected the appealed claims 21, 23, 25, 27, 29, 31, and 34-47 under 35 U.S.C. § 103(a) as unpatentable over Poole in view of Pacanowsky.

The Examiner bears the initial burden of presenting a *prima facie* case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). In order to establish a *prima facie* case of obviousness, the Examiner must show that each and every limitation of the claim is described or suggested by the prior art or would have been obvious based on the knowledge of those of ordinary skill in the art. *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988)). “[R]jections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (*quoted with approval in KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007)).

We have thoroughly reviewed each of Appellants’ arguments for patentability. We are in complete agreement with the Appellants that the claimed subject matter would not have been obvious to one of ordinary skill in the art within the meaning of § 103 in view of the applied prior art. Accordingly, we reverse the Examiner’s rejection for substantially the reasons set forth by Appellants’ Briefs, which we adopt and incorporate herein.<sup>2</sup>

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<sup>2</sup> In rendering this decision we have limited our discussion to independent claim 21. However, the discussion is equally applicable to the remaining independent claims 23, 25, 27, 29, 31, and 34.

The Examiner contends (Ans. 3-4) that Poole discloses a vehicle occupant restraint system comprising an inflatable air bag; a gas generator for inflating the air bag; a nitrogen-containing, non azide gas generant composition within the gas generator that forms nitrogen oxide or dioxide upon combustion. The Examiner acknowledges that Poole does not disclose a selective noncatalytic reducing compound (SNCR, e.g., an ammonium salt) is placed with the gas generant composition, wherein at least one mol of ammonium salt is added per mol of nitrogen oxide or nitrogen dioxide produced upon combustion of the gas generant composition. The Examiner contends that Pacanowsky discloses the use of ammonium sulfate with a non-azide gas generant. The Examiner concluded it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Poole by adding a non-catalytic reducing compound of ammonium sulfate as disclosed by Pacanowsky so as to change or reduce the flame temperature and to have at least one mol of ammonium sulfate added per mol of nitrogen oxide or nitrogen dioxide produced upon combustion of the gas generant composition depending upon the flame temperature desired.

Appellants properly determined (App. Br. 14-15) that Poole neither teaches, nor suggests, nor motivates one of ordinary skill in the art to provide an SNCR compound within a gas generator in heterogeneous relation to a gas generant composition within the gas generator, wherein the selective non-catalytic reducing compound is selected from the group consisting of ammonium salts and amine-containing compounds. In fact, Poole specifically describes another method of reducing the toxic gases NO<sub>x</sub> and CO. Appellants properly determined that in Poole the problem of NO<sub>x</sub> and carbon monoxide in the gaseous effluent is solved by mixing an alkali

metal salt into the gas generant composition. (Poole, col. 8 lines 39-55). Thus, Appellants properly determined that there is no suggestion or motivation to approach the problem of NO<sub>x</sub> and carbon monoxide reduction in any other way, other than by mixing an alkali metal salt within the gas generant composition as explicitly taught as inventive by Poole. (App. Br. 14). Appellants also contend that even if support for a teaching of a gas generator is arguably present, that Poole neither teaches, nor suggests, nor motivates one of ordinary skill in the art to provide an SNCR compound within a gas generator in heterogeneous relation to a gas generant composition within the gas generator<sup>3</sup>, wherein the selective non-catalytic reducing compound is selected from the group consisting of ammonium salts and amine-containing compounds. (App. Br. 14). Appellants further properly determined that Pacanowsky does not cure the deficiencies of Poole because Pacanowsky teaches mixtures of ammonium sulfate within the composition. (App. Br. 15).

The Examiner contends that Pacanowsky, at col. 4, ll. 53-68, discloses the reducing compound discretely interspersed about the gas generant composition. (Ans. 4). Appellants properly determined that Pacanowsky, at col. 4, ll. 53-68, in contradiction to the Examiner's position, teaches that ammonium sulfate is thoroughly mixed within the gas generant composition, rather than in heterogeneous relation to the gas generant composition as required in claim 21. (App. Br. 15).

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<sup>3</sup> The specification, page 5 describes the heterogeneous relation of the SNCR agent and the gas generant, as the disposition of the SNCR around the periphery of the gas generant within the gas generant bed. Not thoroughly mixing the SNCR within the gas generant composition.

The Examiner has not provided adequate reasoning as to why the prior art does not require thorough mixing of ammonium sulfate within the gas generant composition. For the foregoing reasons and those presented in Appellants' Briefs, the rejection of claims 21, 23, 25, 27, 29, 31, and 34-47 under 35 U.S.C. § 103(a) is reversed.

ORDER

The rejections of claims 21, 23, 25, 27, 29, 31, and 34-47 under 35 U.S.C. § 103(a) are reversed.

REVERSED

PL Initial:  
sld

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